CUMULATIVE EDITORIAL INDEX

Including January 1968 through June 1968. Number preceding hyphen is month of issue; those following are page numbers.
AUTOMATION *is indexed in the Applied Science & Technology Index and the Engineering Index, available in libraries generally.*
Microfilm copies are available from University Microfilms, 313 N. First St., Ann Arbor, Mich.

A

Abrasive finishing, 2-81
Accumulating conveyors, 6-68
Actuation, using stepping motors, 2-74
Adhesive
  application, 3-4*
  can assembly, 2-72
  laminating aircraft panels, 6-30*
Air line lubrication, 5-99
Air pollution, market, 5-34*
Annealing line, steel strip, 2-23*
Assembly
  adhesives, 2-72
  automated methods, 2-142*
  automatic, 5-85
  coiled ring, prob., 1-4*
  fishing rods, prob., 4-4*
  pallet, 2-26*
  small motor, prob., 2-4*
  small operations, prob., 6-4*
Audio-visual training technique, 6-33*
Automated learning system, 4-34*
Automatic
  assembly, 5-85
  fire protection, 1-69
  machine loader, 5-28*
  sheet stacking, 4-106
  textile dye machines, 5-28*
  wood pallet nailer, 5-90
Automation
  activities, administrative / engineering, 6-90
  court case, 4-10*
  leadership, 1-52
  printing industry, 6-174*

B

Bag emptying, prob., 6-4*
Baker, H.
  Lubricants for Pneumatic Devices, 5-99
Banks, D. K.
  From Hopper to Production Line, 4-96
Barrett, G. M.
  Economies of Materials Handling Proposals, 6-85
Batching
  control system, 4-30*
Bath, C.
  Energy and Human Relations, 3-20*
Baty, G.
  Stepping Motors, 2-74
Beaird, S. D.
  Job Shop Planning and Control—Part 1, 3-80; Part 2, 5-92
Beroset, J. E.
  Using Magnetic Suspension to Float Small Parts, 5-76
Birrell, K. E.
  Applying Computers to Quality Assurance, 5-162*
Bob, R. D.
  Synchronizing Multiple Eddy-Current Drives, 6-81
Bonding wires, prob., 3-156*
Brady, W. M.
  Applying Fluidics in Food Packaging, 3-148*
Braverman, R. C.
  Selecting Solid-State AC/DC Power Supplies—Part 2, 2-78
Brooks, C. L.
  Assessing Reliability and Efficiency in Automatic Assembly, 5-85
Buffing parts, 2-81
Bulk materials, feeding, 4-96

C

Carlson, G.
  Polishing and Buffing Parts Automatically, 2-81
Challinor, D. R.
  Loading and Unloading Overhead Conveyors, 4-91
Christenson, C. M.
  It All Starts With A Pushbutton, 5-69
Clair, B.
  Converting Motion to Digital Data, 1-87
Cleaning
  fuses, prob., 2-4*
  rubber stoppers, prob., 6-4*
Coating thickness, nuclear gaging, 3-76
Code readers, case identification, 6-68
College graduates, job opportunity, 1-15*
Comella, T. M.
  Call to Leadership, 1-52
Company
  mergers, 3-11*
  president profile, 1-12*
Complexity and operators, 6-15*
Computers
  air conditioning control, 5-26*
  control machine tools, 4-28*
  control N/C machines, 6-28*
  design use, 5-26*
  display station, 6-11*
  foundry melt blending, 6-28*
  future uses, 5-10*
  future value, 4-9*
  invasion of privacy, 4-23*
  job skills, 1-15*
  logic, 5-15*
  low cost and N/C, 4-87*
  maintenance information, 5-26*
  management control, 6-96
  manufacturing in Australia, 4-28*
  match workers and jobs, 4-26*
  oil drilling rig, 3-29*
  prepared programming, 5-28*
  privacy, and, 6-9*
  process control, in, 6-174*
  significance, 5-9*
  software for process control, 2-57
  test systems, carburetors, 6-28*
  time sharing, N/C, 5-24*
  uses, engineering and designing, 4-15*
  using a compiler, 4-206*
Contact materials, relays, 1-77
Contamination control guide, 4-15*
Control, associated logic, 6-62
Controls
  accumulating conveyors, 6-68
  adaptive, milling machine, 5-28*
  analog-to-digital convertors, 1-87
  applying pushbuttons, 5-69
  batching and accumulating system, 4-30*
  center, management, 1-73
  coating thickness, 3-76
  electrical discharge machining, 6-30*
  fluidic design, 3-70
  hoist, 3-67
  job shop data, 3-80; 5-92
  liquid level, 2-61
  magnetic coded belt, 2-14*
  management, in, 6-149*
  nuclear, 3-76
  optimization, 6-174*
  position encoders, 1-87
  position transducers, 1-87
  process computer, 2-57
  relay primer, 1-77
  source data automation, 1-73
  stepping motors, 2-74
  synchro drive, 6-81
  synchronizing eddy-current drives, 6-81
Convertors
  analog-to-digital, 1-87
Conveying
  coffee beans, 5-66
  history, 4-115
Conveyors
  overhead, 4-91
  speed and flexibility, 4-115
Cost analyses, 6-85
Couplings
  quick-disconnect, steel mill use, 4-30*
Crimping contacts, prob., 3-156*
Curry, B. E.
  A Search for Speed and Flexibility, 4-115
Cylinders, roll burnishing, 5-29*

D

Data communication system, 2-12*
Data displays, 6-72
Data processing
  basic language, 5-176*
  coding information, 4-206*
  colleges offering degrees, 4-206*
  copies per employee, 4-9*
  fluidics in card processing, 5-34*
  job shop use, 5-92
  manufacturing control systems, 6-96
  mass storage system, 3-38*
  modeling and simulation, 5-176*
  source data automation, 1-73
Davison, R. L.
  Computer Aided Drafting Systems, 3-145*
DeAngelis, C. E.
  Expand Plant Facilities or Build Anew?, 2-50
Designing
  people, for, 4-206*
  salary programs, 1-10*
Deutsch, S. A.
  A Practical Approach for Appraising Improvement Proposals, 3-92
Devices, controlling liquid level, 2-61
Dispensing grease, prob., 2-4*
Displays, information, 6-72
Drawing and extruding process, 3-26*
Drennan, H. J.
  Creating Source Data Systems, 1-73
Drill sharpening, prob., 5-4*
Drives, eddy-current, 6-81
Durand, E. A.
  Designing Manufacturing Control Systems, 6-96

E

Economics
  capital investment, 3-92
  discounted cash flow method, 3-92
  evaluating investments, 3-92
  hole punching operations, 3-89
  improvement projects, 3-92
  machining centers, 3-56
  materials handling proposals, 6-85
  plant expansion, 2-50
Eddy-current drives, 6-81
Education
  engineer motivation, for, 5-15*
  engineering, 4-34*
  engineering course, 4-15*
  engineering graphics, 4-120*
  guide for instruction, 4-120*
  manufacturing mobile unit, 3-38*
Electric conversion, ac to dc power, 2-78
Electrical, information displays, 6-72
Electrochemical machining, use, 1-26*
Electromagnetic forming, 4-191*
Electronics
  information displays, 6-72
  ink jet control, 5-90
  parts handling, 5-76
  training, 3-35*
Employee
  communications, 6-10*
  development programs, 2-28*
  education, company financing, 3-35*
  talented, 6-11*
  wages, 6-10*
Employment, new jobs created, 5-9*
Energy, importance to culture, 3-20*
Engineering
  education, 4-34*
  handling systems, 4-85
  job attitudes, 5-24*
  salaries, 6-33*
Ensign, A. C.
  It All Starts With A Pushbutton, 5-69
Equipment, justification, 6-85
Erb, P. F.
  Applying Low Cost Computers to N/C, 4-187*

F

Feeding
  bulk materials, 4-96
  cloth, prob., 3-4*
  parts, 4-110
  wood slats, prob., 4-4*
Finishing parts, 2-81
Fire
  baffles use plywood, 3-26*
  protection systems/production equipment, 1-69
Fitzgerald, E. B.
  Handling—A Challenge, 2-20*
Fleischauer, F. J.
  Stacking Sheets Automatically, 4-106
Fluid power
  educational text, 4-206*
  information displays, 6-72
Fluidics
  automatic gaging, 5-82
  controls, 6-152*
  quarterly publication, 5-176*
  sensor, 5-26*
  system design, 3-70
Forecast, automation expenditures, 1-11*
Freed, D. W.
  Put Control Into Your Management, 6-149*
Free enterprise and social problems, 3-10*

G

Gladfelter, R. F.
  Feeding and Orienting Parts, 4-110
Government
  computer checked tax forms, 5-34*
  expected output 1968, 4-9*
  new patent abstracts, 2-14*
  support, skills program, 3-38*
Green, R. G.
  Sensing and Controlling Liquid Level, 2-61
Griessemer, H. A.
  Using Magnetic Suspension to Float Small Parts, 5-76
Grit application, prob., 4-4*

H

Hambleton, G. W.
  Computer's Role in Decision Making, 1-141*
Handbook, engineering sciences, 4-206*
Handling
  billets, prob., 5-4*
  challenge to suppliers, 2-20*
  coffee processing, 5-66
  design of parts, 4-110
  drum, prob., 6-4*
  economic analyses, 6-85
  educational sources, 4-78
  feeding and orienting, 4-110
  fork trucks for women, 5-34*
  literature, prob., 2-4*
  magnetic, 5-76

*Asterisks indicate brief items appearing in departments.

magnetic coded belt, 2-14*
manipulators, source, 4-23*
systems approach, 4-85
trends, 4-78
whiskey cases, 6-68
Harvey A.
When the Systems Approach Pays Off, 6-20*
Hoff, J. M.
Simulation—Management Tool in Decision Making, 2-83
Hole punching operations, economic factors, 3-89
Holographic camera
design aid, 1-30*
vibration study, 2-37*
Humphrey, E. F.
Developing Fluidic Circuits for Industrial Controls, 3-70

I

Incentives, N/C group, prob., 4-4*
Industry Advisory Committee on Automation, 4-12*
Inflation and price stability, 4-9*
Information handling, 5-62
Inserting instruction sheets, prob., 5-4*
Inspecting flanges, prob., 5-4*
Instruments, markets for, 6-9*

J

Job
shop planning and control, 3-80; 5-92
skills, 1-15*

K

Kaminski, J. E.
The Case for an Information Division, 5-62
Keebler, J. C.
Machining Centers of All Ages, 3-56
Trends in Handling Automation, 4-78
Kidera, E. H.
Simulation—Management Tool in Decision Making, 2-83

L

Labeling, prob., 3-156*
Labor clash, automated ships, 6-12*
Labor-management relations, 5-12*
Large, D. M.
Using Magnetic Suspension to Float Small Parts, 5-76
Laser, applications, 6-23*
Laser beam, resistor trimming, 5-28*
Leadership, developing management, 1-52
Level control, liquid, 2-61
Liability, product, legal view, 1-30*
Liquid
level control, 2-61
level detection, prob., 4-4*
Ligomenides, P. A.
Introduction to Logic, 6-62
Loading/Unloading
machine, prob., 4-4*
overhead conveyors, 4-91
Logic, introduction to, 6-62
Logistics, industrial, 5-176*
Lubricating oils, characteristics, 5-99
Lubricator, portable tillpump, 3-26*
Luke, H. D.
The Management Man of 1977, 1-20*

M

McAlpine, G. A.
Total Automation Means Information Too, 4-20*
McRainey, J. H.
Handling Between Floors, 1-59
Handling Applications Tailored to Requirements, 4-100
Machine tools
controlled by computer, 4-28*
grinding abrasive belts, 3-23
imports and exports, 5-9*
Machines
assembly, 5-85
marketing developments, 3-23*
Machining
centers, 3-56
electrical discharge, 6-30*
Magnetic parts handling, 5-76
Magnetic pulse forming, high operating rates, 4-30*
Magnetizing discs, prob., 6-4*
Magnets
new applications, 5-176*
permanent ceramic, 3-23*
small motors, 3-23*
Maintenance,
cost reduction, 2-23*
instruments, of, 6-174*
Management
advanced business systems, 6-174*
call to leadership, 1-52
computer impact on, 6-174*
control, EDP systems, 6-96
data control center, 1-73
economics, materials handling, 6-85
foremen, using effectively, 4-206*
good habits, 2-10*
importance of information, 4-20*
importance of innovation, 6-9*
in 1975, 1-157*
information, 5-62
logic, introduction, 6-62
planning work, 5-176*
progressive concepts, 1-152*
simulation use, 2-83
Manager's behavior, 4-11*
Manufacturing
computers in Australia, 4-28*
control systems, EDP, 6-96
plastics extrusions, 6-174*
scroll slitted strip, 2-72
Marking,
card controlled, prob., 3-4*
tape controlled, prob., 3-156*
Materials handling
automatic bulk feeding, 4-96
economics of, 6-85
multistory, 1-59
pictorial applications, 4-100
rules for solving problems, 3-29*
sheet stacking, automatic, 4-106
systems, conveying, 4-115
vertical, 1-59
Measuring
hole, prob., 1-4*
stroke length, prob., 5-4*
Mechanical input displays, 6-72
Mensh, M.
Organizing Process Computer Software, 2-57
Message transmission by automatic typewriters, 3-10*
Metering a suspension, prob., 5-4*
Metal forming
high operating rates, 4-30*
magnetic pulse method, 4-30*
Microwave heating system, 2-23*
Miller, L. D.
Information Displays, 6-72
Models, simulation, 2-83
Monitoring, plant safety, 6-89
Mueller, D. A.
Selecting Solid-State AC/DC Power Supplies—Part 2, 2-78
Murdoch, S. M.
Pneumatic Logic Automates Gaging, 5-82

N

Nuclear gaging, coating thickness, 3-76
Numerical control
coded key, tool selection, 5-90
computer controlled machines, 6-28*
computer controlled machining, 3-23*
engineering graphics, 1-152*
low cost computers, 4-87*
machining centers, 3-56
machining large castings, 2-23*
tape preparation, 5-24*

O

Orienting parts, 4-110
Organization information handling, 5-62

P

Packaging
chocolates, 1-23*
coffee, 5-66
publications, prob., 4-4*
Palletizing
coffee cases, 5-66
newspapers, prob., 6-4*
whiskey cases, 6-68
Pallets, automatic nailer production, 5-90
Parts handling, magnetic, 5-76
Peters, W. W.
Electromagnetic Forming, 4-191*
Photoelectric case identification, 6-68
Photoelectric position encoders, 1-87
Planning job shop, 3-80; 5-92
Plastic
reinforced glass for structural components, 4-30*
Plating tape programmed, 3-67
Pneumatic
conveying, 5-66
devices, lubrication, 5-99
logic gaging, 5-82
Polishing parts, 2-81
Pouch sensing, prob., 3-4*
Press, fluidic controls, 3-70
Printed circuit boards, 5-28*
Printing, controlled ink jets, 5-90
Process control data, 1-33*
Process planning, 3-56
Processing coffee beans, 5-66
Product
development, 1-152*
liability, 2-139*
Professionalism, 4-10*
Programmed hoist, 3-67
Programming
machining centers, 3-56
process computer, 2-57
Punching operations, economic factors, 3-89
Pushbuttons, application, 5-69

Q

Quality assurance, 5-162*
Quality control
clean engine parts, 3-26*
influence on handling, 4-110

R

Rader, L. T.
What Will Management Be Like in 1975?, 5-157*
Railroad
automatic car identification, 1-30*
perpetual car inventory, 1-30*
Relays, contact material, 1-77
Removing tips, prob., 3-156*
Rhodes, D.
Fluidic Controls—Present and Future, 6-152*
Riveting, TV antennas, 2-72
Rowe, S.
Controlling Coating Thickness, 3-76

S

Salaries, engineering, 6-33*
Schneider, R.
A Control Relay Primer, 1-77
Sensing steel bars, prob., 3-156*
Sewing, footwear, prob., 4-4*
Simon, R. H.
Factors to Consider in Evaluating Hole Punching Operations, 3-89
Sims, E. R., Jr.
Automating Administrative and Engineering Functions, 6-90
Simulation, management use, 2-83
Software, process computer, 2-57
Source data automation, 1-73
Splicing rope belts, prob., 3-4*
Stacker crane control system, 5-29*
Standards, uniform pallet, 4-15*
Static power conversion, 2-78
Steelmaking, technology, 1-23*
Stepping motors applications, 2-74
Structural components, glass reinforced plastic, 4-30*
Supervisor, effective, 2-11*
Surface finishing, 2-81
Synchronizing electrical drives, 6-81
Systems
approach, in materials handling, 4-85
engineering methods, 1-152*
filing, 3-12*
fire protection, 1-69
studies for civil problems, 1-28*
total, advantages, 4-20*

T

Tanne, S.
Systems Approach for Flexibility, 5-20*
Tape control, plating, 3-67
Tape splicing, prob., 5-4*
Techniques, way things work, 6-174*
Technology
importance to growth, 5-9*
tomorrow's, 5-10*
Teeple, J. A.
Detect the Fire Before It Flames, 1-69
Testing
automatic computer panel wiring, 3-29*
carburetors, computer controlled, 6-28*
electric equipment, with, 1-33*
plywood with ultrasonic sound, 3-23*
Time sharing data terminal, 4-11*
Time sharing terminal, 1-10*
Time standard, atomic second, 1-33*
Tool changing, machining centers, 3-56
Torque
measurement, photocell device, 1-33*
tool, prob., 3-4*
Training, audio-visual method, 6-33*
Transistor, 20th birthday, 2-34*
Trends, handling, 4-78

U

Ultrasonics
leak detection, 2-38*
sound testing, 3-23*
Underhill, B. N.
It All Starts With A Pushbutton, 5-69
Unionization, 5-11*
Unloading, overhead conveyors, 4-91

V

Vacuum transfer devices, prob., 6-4*
Valve clock, prob., 1-4*
Videotape recorder, machine motion study, 4-15*

W

Waste disposal, 6-174*
Weighing, remote crane, prob., 2-4*
Welding
distortion, detection and control, 5-26*
electron beam, tube mill, 2-23*
Wheels, grinding, metal cutting tools replacement, 2-26*
Whitefield, K. C.
Using Magnetic Suspension to Float Small Parts, 5-76
Wire
harness laying, prob., 1-4*
termination, N/C system, 6-28*

X

X-Radiation measurement method, 4-15*

Z

Zollinger, H. A.
Solving Materials Handling Problems, 4-85

CUMULATIVE EDITORIAL INDEX

Including July 1968 through December 1968. Number preceding hyphen is month of issue; those following are page numbers.
AUTOMATION *is indexed in the Applied Science & Technology Index and the Engineering Index, available in libraries generally.*
Microfilm copies are available from University Microfilms, 313 N. First St., Ann Arbor, Mich.

A

Accumulators, hydraulic, 11-64
Adaptive control, milling machine, 12-15*
Adjustable speed drives, ac and dc, 8-89
Air control, 8-83
Applicators, microwave heating, 9-52
Assembly,
  adhesives, with, 7-84*
  folding rules, 7-28*
  problems, prob., 7-4*
  machines, 11-15*
  parts, 12-73
  prob., 11-6*
  whippers, prob., 9-4*
Automation,
  assembly operations, 12-73
  labor views, 8-9*
  philosophy, 9-46
  process control, 8-94
  people requirements, 7-20*
  study, effects on workers, 11-10*

B

Bag removal, prob., 8-4*
Baker, H.
  Electrical Drawings Can Be Valuable Maintenance Tools, 11-87
Batch processes, computer control, 9-56
Beck, C. D.
  Motor Drive Inverter Ratings, 7-82
Becker, L.
  Selecting AC and DC Adjustable Speed Drives, 8-89
Beckett, J. A.
  Information Control—Key to Systems Management, 11-59
Bolz, R. W.
  A Realistic Look at Automation, 9-46
Brady, R. C.
  Try Operation Survival, 8-20*
Breaker rolls, 7-79
Buczkowski, D. E.
  Controlling Prepaint Metal Treatment Systems, 7-73
Builder/user relationship, automated assembly, 12-73
Burt, D. A.
  Testing Transistors By Co[illegible]er, 11-68

C

Canning, soft drinks, high-speed, 9-49
Capital investment decisions, 12-68
Card reader, 10-10*
Carr, F.
  Improving N/C Information Systems, 10-153*
Cartoning, 7-59
Casing, can, 9-49
Centralized lubrication systems, 12-94
Chandler, E. F.
  Motor Drive Inverter Ratings, 7-82
Chemical etching, metal removal, 10-60
Circulating oil systems, 12-94
Coil winding machine, 8-26*
Compensation, N/C operator, prob., 9-4*
Composites, metallic, 11-141*
Computer control,
  automated warehouses, 7-28*
  batch processes, 9-56
  building environment, 10-27*
  hot rolling mill, 11-15*
  modeling, 12-158*
  N/C machines, 12-15*
  pipeline, 12-12*
  production, 10-60
Computers,
  aid to decision-making, 9-132*
  building design, 9-12*
  design aid, 11-18*
  digital and analog, 9-144*
  education use, 10-30*
  evaluation tool, 10-27*
  introduction to, 10-162*
  language, Autran, 10-27*
  program for short-circuit studies, 11-18*
  protect against faults, 7-23*
  selection of, 10-162*
  simultation of semiconductors, 7-23*
  software patents, 10-16*
  system responsibilities, 7-68
  teaching fundamentals, 9-15*
  time-sharing, 12-158
  training, importance, 12-20*
  transistor testing, 11-68
Contacts, relay, 11-88
Containerization, progress in, 10-76
Controls,
  adaptive, 8-23*
  chemical process, prob., 11-6*
  computer, batch processes, 9-56
  end-point, 10-89
  fluidic, 8-80
  management information, 11-59
  management, small firms, 7-86
  measuring performance, 11-141*
  motor drive inverter ratings, 7-82
  numerical, 10-72
  optimal design for computers, 7-134*
  power-demand, 10-12*
  pneumatic, 8-79, 83
  prepaint treatment systems, 7-73
  process engineering, theory, 10-162*
  production heating, 12-90
  reed switch magnet, 10-66
  relay, 11-88
  solid-state, 8-98; 9-75
  systems, process industries, 8-28*
  trends in, 8-59
  uninterruptible power system, 11-71
Conveyors,
  glass tube, prob., 10-6*
  magnetic rolls, 9-69*
Corporate,
  information system, 7-86
  mergers, 8-7*
Costs,
  relocation allowances, 10-16*
  solid-state controls, 8-98
Crandall, T. L.
  Programmable Monorail Automates Immersion Processes, 10-60
Critical path analysis, by bar chart, 10-162*
Culbertson, R. L.
  Building Block Approach to Air Control, 8-83

D

Damage prevention, prob., 8-4*
Data communications, principles, 11-141*
Data processing,
  computer programming, 7-134*
  information science review, 7-134*
  introducing text, 7-134*
  language processing, 8-190*
  microimage system, 8-12*
  use in small firm, 7-86
  video tape filing, 9-12*
Data systems,
  design responsibilities, 7-68
  production, 9-61
Deburring, electrochemical, 11-84
Definitions, N/C, 9-80
DeLong, L. W.
  Applying Computer Controls to Batch Processes, 9-56
Design, packaging machines, 7-59
Desurger, hydraulic, 11-64
Detecting pinholes, prob., 9-4*
Developing better managers, university's role in, 12-18*
Dincher, T. A.
  Guidelines for Applying Fluidics, 8-80
Dipole rotation, microwave heating, 9-52
Dispensing hot lead, prob., 8-4*
Display systems, engineering of, 10-162*
Displays, graphic computer terminals, 12-15*
Document transmission, 11-10*
Dolter, T. R.
  Combating Fluid Shock in Hydraulic Systems, 11-64
Draft policies, effect on engineers, 11-12*
Drawings, electrical, as maintenance tools, 11-87
Drives,
  adjustable speed, ac/dc, 8-89
  handling unit, prob., 12-6*

E

EDP reports, 11-10*
Education,
  basic functions, 8-15*
  computer use, 10-30*
  effect of draft policies, 11-12*
  individualized, 7-15*
  innovations in, 9-15*
Electrical discharge machining, 12-84
Electrochemical
  deburring, 11-84
  machining, 12-87
Electrohydraulic systems, 8-73
Electronics,
  dictionary of terms, 9-144*
  guide to sources, 8-190*
Emergency power supplies, 11-71
Employees, communicating with, 10-52
Employment of minorities, 10-16*
End-point control, 10-89
Engineering,
  liberal arts, and, 8-190*
  mathematical methods for, 10-162*
Engineers, education and the draft, 11-12*
Equipment, capital, 12-68
Ethics, recruiting, 10-9*
Executive,
  maturity, 7-10*
  recruiting, 11-11*

F

Faller, W. J.
  Applying Magnetics in Manufacturing, 11-140*
Feasibility studies, 11-77
Feed rolls, 7-79
Feeding,
  chalk, prob., 8-4*
  wood slats, prob., 9-4*
Filing system, random access, 12-9*
Filling,
  can, 9-49
  packaging, 7-59
Flow coating, 7-84*
Fluid shock, 11-64
Fluidic power, foundation formed, 12-12*
Fluidics,
  controls, 8-80
  proceedings, 11-141*
Forecasting, technological, 10-162*
Forging, antifriction bearings, 7-28*
Foundry, handling, 7-57
Freed, D. W.
  Thing-Oriented Reports, 11-20*

G

Gaging, nuclear, 10-12*
Gerchow, F. J.
  Applying Pneumatic Bulk Handling Systems, 7-71
Gesdorf, E. J.
  Lubricating Today's Production Equipment, 12-94
Ghest, R. C.
  Types and Uses of Integrated Circuits, 12-142*
Government,
  community training program, 9-28*
  independent business incentives, 7-9*
  information for standard interests, 7-33*
  policy, effect on business, 11-30*
  vehicle records, 9-28*
Green, R. G.
  Increasing Packaging Speed, 7-59
Grossman, L.
  Using a Computer to Control Production, 10-60

H

Haire, M.
  Managing Management Manpower, 7-121*
Handling,
  end of the line, 10-76
  film cartridges, prob., 7-4*
  loads, making and breaking, 10-76
  mail, 12-30*
  packaging, in, 7-59
  pneumatic conveying, 12-158*
  pneumatic systems, for, 7-71
  for production heating, 12-90
  sand and molds, 7-57
  towline cart systems, 11-82
  tubing, prob., 7-4*
Harty, R. A.
  Selecting Temperature Transducers, 8-68
Hayes, J. F.
  Meeting Management's Information Needs, 11-137*
Heat transfer from molds, prob., 7-4*
Heating,
  microwave energy, with, 9-52
  precision, 12-90
Hiring, veteran preference, 10-16*
Holloway, C. C.
  Solutions in Search of Problems, 10-20*
Hunt, J. V.
  Planning Reliability Programs, 7-52
Hydraulic desurger, 11-64
Hydraulics, field experience, 7-134*

I

Individualized education, 7-15*
Industry,
  role in pollution control, 12-11*
  social role, 11-54
Information,
  development systems, 11-141*
  management systems, 9-61; 11-59
Inserting, newspaper sections, prob., 11-6*
Inspecting with ultraviolet light, 10-15*
Instruction system, 9-15*
Integrated circuits, 8-94; 9-144; 10-27*; 12-142*
Inverter,
  assistance, prob., 8-4*
  ratings, motor drive, 7-82

J

Job opportunties, 12-30*
Johnson, J. E.
  Servomechanisms for Production Machine Control, 8-73

K

Keebler, J. C.
  Production Control for Automation, 9-61
  Trends in Control, 8-59
  Trends in Production Equipment, 12-60

L

Labor,
  and automation, 12-10*
  management relations, 7-11*

*Asterisks indicate brief items appearing in departments.

Landon, R.
Microwave Energy—a Growing Production Tool, 9-52
Languages, N/C programming, 10-72
Lasers, 11-15*; 12-12*, 82
Lenher, S.
Understanding Industry's Social Role, 11-54
Logic,
pneumatic, 8-83
solid-state, 8-98
Lubrication systems, 12-94

M

MacDonald, M. A.
We Need More "Automaticians," 7-20*
Machine tools,
European, 8-23*
relays for, 11-88
Machines, coconut deshelling, 9-68*
Machining
exotic methods, 12-81
safety, 8-65
Magnetic handling, 11-140*
Magnets, reed switch actuators, 10-66
Mail automation, 12-30*
Maintenance,
solid-state controls, 8-98; 9-75
tools for electrical drawings, 11-87
Malloy, J. P.
Computer Can Be Valuable Tool in a Small Firm, 7-86
Management,
budget systems, 7-134*
company case study, 8-190*
competitive, 12-9*
computer furnished data, 12-15*
computers in small firms, 7-86
cost analysis, 7-9*
decision-making, 9-132*; 12-68
improving creativity, 8-190*
industrial research, 12-158*
information control, 11-59
information system, 11-137*
linear programming, 12-158*
philosophy, 9-46
planning, importance of, 10-20*
product planning, 11-141*
production, 9-61
professional, 11-9*
programming course, 8-190*
reports, thing-oriented, 11-20*
technical correspondence, 7-134*
training, 9-9*
trends in control, 8-59
Managerial decision-making, 11-77
Manpower,
systems, management, 7-121*
utilization, 9-9*
Manufacturing,
electromachining processes, 9-144*
engineering future, 12-139*
variable-mission systems, 8-171*
Market influence on feasibility, 11-77
Materials handling,
managing, 11-141*
programmable monorail system, 10-60
McEwen, G.
Systems Concept Simplifies Circuit Troubleshooting, 8-86
McRainey, J. H.
End-of-Line Handling, 10-76
Measuring,
color, prob., 9-4*
stroke length, prob., 10-6*
valves, lubrication, 12-94
Mechanized foundry, 7-57
Mergers, 8-7*; 11-11*
Message repeater, prob., 7-4*
Metal forming, explosive bonding technique, 10-12*
Metal parts treatment system, 7-73
Metric system,
conversion policy, 8-12*
study, 11-18*
Michaels, G. T.
Electrochemical Deburring, 11-84
Microprinter, 10-9*
Microwave system, 12-12*
uses, 9-52
Mincavage, D. P.
Computers as an Aid to Decision-Making, 9-132*
Mixer rolls, 7-79
Monesmith, B. C.
Future Environment of Manufacturing, 12-139*
Monitoring, closed circuit TV, 12-12*
Moskowitz, L. R.
Selecting Magnets for Reed Switch Actuation, 10-66
Motor controls, ac and dc, 8-89
Multimode cavities, microwave heating, 9-52
Murphy, B. H.
Computers Are For People, 12-20*
Murphy, E. G.
Precision in Production Heating, 12-90

N

Newbold, W. F.
Automatic Process Control, 8-94
NLRB decisions, 7-11*
Numerical control, 10-72
computer prepared tapes, 12-15*
economics, 10-12*
gear drilling, 9-26*
gun drilling, 9-22*
information center, 9-28*
machining, 8-65; 10-15*
retrofitting, 11-15*
systems, 10-153*
terminology, 9-80

O

O'Brien, E. F.
Automating Assembly Operations, 12-73
Occupational safety, 11-30*
Optional control, solutions, 9-144*
Order selection system mechanized, 11-18*
Organization, reliability control, for, 7-52
Overwrapping, 7-59

P

Packaging,
can, 9-49
increasing speed, 7-59
Perforating rolls, 7-79
Peripheral equipment, computer systems, 7-68
Perry, C. B.
Creating Versatile Manufacturing Systems, 8-171*
Personality test, 11-30*
Pickering, T. C.
Towline Cart Systems, 11-82
Piercing, oyster shells, prob., 10-6*
Plating, automatic techniques, 7-28*
Plug-in relays, 11-88
Pneumatics,
controls, 8-79
handling application, 7-71
logic, 8-83
systems, 8-86
Polishing balls, prob., 12-6*
Positional system, electrohydraulic, 8-73
Positioning bobbins, prob., 12-6*
Powell, R. O.
N/C Fundamentals, 10-72
Power supplies, dc, 11-71
Prepaint treatment systems, 7-73
Price, T. L.
Economics of Wire Termination, 9-70
Printed circuit inspection, 7-23*
Process control,
future of, 8-94
polymerization, prob., 8-4*
principles of, 9-144*
technology, 8-94
Processing production data, 9-61
Production,
candy making, 10-12*
computer controlled, 10-60
continuously cast sheet, 10-15*
control, 9-61
equipment, trends in, 12-60
numerical control, 8-174*
Programming,
computer prepared, 12-15*
end-point control, 10-89
N/C, 10-72
N/C safety, 8-65
Programs, transformer design, prob., 9-4*
Protection tubes, thermocouple, 8-68
Protective coatings, technology, 9-144*
Proximity detectors, 9-11*, 68*
Pyrometers, 8-68

Q

Quality control,
computer controlled, 7-86
reliability programs, 7-52

R

Rader, L. T.
Preparing Employees for Technological Change, 10-52
R&D executives, qualifications, 10-10*
Recruiting, ethics, 10-9*
Reed switches, magnets for, 10-66
Reinhardt, R. W.
Production N/C—Present and Future, 8-174*
Relays, control, 11-88
Reliability, programs for, 7-52
Removing,
bags, prob., 10-6*
tips, prob., 9-4*
Resistance thermometers, 8-68
Retirement ages, for women, 10-16*
Retrieval station, 7-10*
Riveting, sonic, 8-26*
Rolamite, commercial development, 10-28*
Rolls, industrial, 7-79

S

Safety in N/C, 8-65
Scheduling, short-interval, 12-158*
Schroeder, W. J.
Planning a Systems Project, 10-153*
Sealing, package, 7-59
Selecting motor controls, 8-89
Sensing diecastings, prob., 12-6*
Sequencing methods, 10-89
Servomechanisms, 8-73
Servo valves, 8-73
Shredding rolls, 7-79
Shrinkage analysis, 7-52
Simpson, J. L. A.
Laser Applications Invade Production Field, 12-82
Sims, E. R.
Feasibility Study Upgrades Managerial Decision-Making, 11-77
Society and industry, 11-54
Solid-state controls, evaluating, 9-75
Solid-state logic, 8-98
Solvent removal, prob., 8-4*
Solving social problems, 11-54
Sorting, wooden slivers, prob., 7-4*
Source data,
automation, 12-10*
entry, 9-61
Speed, packaging, 7-59
Stacker cranes, 11-18*
Stacking
extruded tubes, prob., 11-6*
plastic sheets, prob., 12-6*
Standard reference data, 10-16*
Standards, catalog, 10-27*
Steam plant, mobile, 8-12*
Steel, J. T. H.
Testing Transistors by Computer, 11-68
Steelmaking, continuous casting, 9-22*
Stepping programmers, 10-89
Stewart, C. W.
Making Capital Investment Decisions, 12-68
Strikes, metal products industry, 11-10*
Studies, feasibility, 11-77
Systems,
management and information control, 11-59
projects, 10-153*
transfer for integrating, 7-28*

T

Tape preparation, reading drawings directly, 12-15*
Technological change, impact of, 10-52
Techsortium, definition, 11-30*
Temperature,
monitoring system, 12-12*
transducers, 8-68
Termination, wire, 9-70
Terminology, N/C, 9-80
Testing,
mass spectrometry, 7-28*
simulator, line voltage, 11-15*
transistors, computerized, 11-68
Thate, A.
Why Go Solid State?, 8-98
Thermistors, 8-68
Thermocouples, 8-68; 12-30*
Thermometer calibration, 10-16*
Thermometers, resistance, 8-68
Thornhill, R. B.
Numerical Control Terminology, 9-80
Tooling, N/C safety, 8-65
Towline cart systems, 11-82
Training,
computer personnel, 10-30*
electromechanical technician, 8-26*
hard-core jobless, 10-16*; 11-30*
video tape system, 11-12*
Transducers, temperature, 8-68
Transfer machines,
automotive crankshafts, 11-15*
automotive differentials, 9-22*
Transistor testing, computerized, 11-68
Transistors, fabrication, 10-27*
Transportation, 10-76
Treatment systems, metal parts, 7-73
Troubleshooting
panel, prob., 10-6*
pneumatic circuits, 8-86
Turnbull, R.
Applying End-Point Control with Stepping Programmers, 10-89

U

Uninterruptible power systems, 11-71
Union, view on automation, 8-7*
Universities; future role, 8-15*
University
collaboration, 12-18*
/industry sabbatical, 12-18*
Utility relays, 11-88

V

Value engineering, conference proceedings, 9-144*
Valves,
flapper nozzle, 8-73
lubrication measuring, 12-94
servo, 8-73
Vandenburgh, G. K.
Electrochemical Machining—Solves Difficult Manufacturing Problems, 12-87
Vanderlinde, D. C.
Accent Safety in N/C Machining, 8-65
Velocity systems, electrohydraulic, 8-73
Video tape systems,
filing, 11-9*
management use, 10-11*
Voorhes, W. G.
Electrical Discharge Machining—a Competitive Production Tool, 12-84

W

Waveguides, microwave heating, 9-52
Webb, J. C.
A Case for Creativity in Business, 9-20*
Weighing system, railroad car, 11-18*
Wilbraham, L.
Delegate Full Systems Responsibility, 7-68
Wire,
termination, 9-70
wrapping, 9-70
Wiring, large backplanes, 9-70
Work performance, coping under pressure, 12-11*

Z

Zamzow, C. D.
Control Relays, 11-88